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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,085

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EXAMINER

RAINEY, ROBERT R

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,085	Applicant(s) ELDON ET AL.	
	Examiner ROBERT R. RAINEY	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-7,9-11,14-20 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-7, 9, 10, 11, 14-20, and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 and 16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 3, 5-7, 9, 10, 14-20, and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,067,074 to *Lueders* ("*Lueders*") in view of U.S. Patent No. 6,704,004 to *Ostergard et al.* ("*Ostergard*") and further in view of U.S. Application Publication No. 2002/0034930 to *Yamazaki et al.* ("*Yamazaki*").

As to **claim 1**, *Lueders* discloses a keyboard with flexible display and prompt capability and in particular:

A keypad comprising:

a set of physical switches arranged as a first fixed configuration in a first plane (see for example Fig. 2 and 3 items 28);

a continuous flexible keymat (see for example Fig. 3 items 32, 34 and 36)

including a continuous flexible display film (see for example Fig. 3 items 34 and

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36), extending over the set of physical switches arranged in the first configuration wherein the continuous flexible display film is configured to present a plurality of controllable pixels over each switch (see for example Fig. 6-8 and 4:45-5:2) and arranged to flex when a user presses on the display in a designated switch area to operate a respective underlying physical switch (see for example Fig. 3); and a display controller operable to control the continuous flexible display film to have a first display output in which a first set of indicia are displayed in association with the set of physical switches and a second display output in which a second set of indicia, different to the first set of indicia, are displayed in association with the set of physical switches (see for example Fig. 6-8 and 4:45-5:2).

Ostergard discloses an arrangement for integration of key illumination into keymat of portable electronic devices and in particular:

A keypad comprising:

a set of physical switches arranged as a first fixed configuration in a first plane (see for example Fig. 4 items 110);

a set of mechanical key elements (see for example items 60 in Fig. 8B, 9, 10A, and 10B) arranged as a second fixed configuration in a second plane wherein the first configuration and the second configuration are in register such that each mechanical key element overlies a corresponding switch such that movement of a mechanical key element by a user physically actuates its corresponding physical switch (see for example Fig. 4) and wherein each

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mechanical key element has a length, a width and a height (this is evident in the cited figures) and comprises a separate outer pad for actuation by a user (this is evident in the cited figures);

a continuous flexible keymat (see for example Fig. 1C, which items are also shown in Fig. 9), extending beneath the set of mechanical key elements arranged in the second configuration and over the set of physical switches arranged in the first configuration wherein the outer pads of the mechanical key elements provide a discontinuous raised profile with respect to the continuous flexible keymat wherein the continuous flexible keymat is configured to fixedly position the set of mechanical key elements in the second configuration for user actuation (this can be seen for example in Fig. 9) and to present a plurality of controllable pixels under each of the mechanical key elements (see for example Fig. 10A and 10B) and arranged to flex when a user moves any one of the set of mechanical key elements to operate a respective underlying physical switch (see for example Fig. 4); and

a display controller operable to control the continuous flexible keymat to have a first display output in which a first set of indicia (see for example Fig. 10A) are displayed in association with the set of mechanical key elements and a second display output in which a second set of indicia, different to the first set of indicia, (see for example Fig. 10B) are displayed in association with the set of mechanical key elements (see for example Fig. 10A and 10B).

Lueders and *Ostergard* are analogous art because they are from the same field of endeavor, which is keypads with keys having programmable indicia.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to improve the keymat of *Lueders* by adding mechanical key elements and associating the display of indicia with the mechanical key elements as taught by *Ostergard*. The suggestion/motivation would have been to provide advantages such as to make the legends/indicia more legible (see for *Ostergard* 8:50-52).

Yamazaki discloses an electronic device (see for example Fig. 1) and usage thereof in which a keyboard with changeable indicia is used and in particular: key elements arranged to protrude through individual holes in a housing of the electronic device (see for example Fig. 1 and Fig. 3).

Lueders and *Ostergard* and *Yamazaki* are analogous art because they are from the same field of endeavor, which is keypads with keys having programmable indicia.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to include the feature of key elements arranged to protrude through individual holes in a housing of the electronic device as taught by *Yamazaki* in the keymat after *Lueders* and *Ostergard*. The suggestion/motivation would have been to provide advantages such as to make it possible to press the keys while providing protective housing. (The limitation

from claim 15 is combined here in order to allow the preponderance of the claims to be addressed using the same combination of references.)

As to **claim 3**, in addition to the rejection of claim 1 over *Lueders*, *Ostergard*, and *Yamazaki*, *Yamazaki* further discloses that the key elements are rigid elements interconnected by the continuous flexible display film (see for example Fig. 3 noting that item 603 is shown undeformed between 3A and 3B).

As to **claim 5**, in addition to the rejection of claim 1 over *Lueders*, *Ostergard*, and *Yamazaki*, *Yamazaki* further discloses that each outer pad is transparent (see for example [0072]).

As to **claim 6**, in addition to the rejection of claim 1 over *Lueders*, *Ostergard*, and *Yamazaki*, *Lueders* further discloses that the continuous flexible display film is configured to emit light (see for example 5:4 "backlighting panel 34").

As to **claim 7**, in addition to the rejection of claim 1 over *Lueders*, *Ostergard*, and *Yamazaki*, *Yamazaki* further discloses an electronic device including a keypad as claimed in claim 1 and the said display controller (see for example Fig. 1 for the electronic device; the display controller was already covered in the rejection of claim 1).

As to **claim 24**, all limitations were covered in the rejection of claim 7 as depended from claim 1. The rejections and art cited already assumed that the indicia were displayed from each key element.

As to **claim 9**, in addition to the rejection of claim 24 over *Lueders, Ostergard*, and *Yamazaki*, *Yamazaki* further discloses that the first mode is a numeric input mode and the first set of indicia are numeric indicia, and the second mode is an alphabetic input mode and the second set of indicia are alphabetic indicia (see for example [0105] in which the first set of indicia corresponds to the first memory and the second set of indicia corresponds to the third memory).

As to **claim 10**, in addition to the rejection of claim 9 over *Lueders, Ostergard*, and *Yamazaki*, *Yamazaki* further discloses that the first and second modes the indicia displayed from each key element is indicative of the character that would be input on pressing the key element (see for example Abstract, especially "With the present invention, display devices are formed in operation keys for inputting information to electronic devices such as portable information terminals, typically portable telephone devices, and information terminals, typically personal computer or stationary telephone devices. A user is able to

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recognize the operation keys by characters, symbols, and numerals displayed in the operation keys by the display devices.” or [0010] or [0286]).

As to **claim 15**, the limitations of claim 15 were covered in the rejection of claim 1. (Examiner assumes that the correct dependency of claim 15 is to claim 24.)

As to **claim 14**, in addition to the rejection of claim 1 over *Lueders*, *Ostergard*, and *Yamazaki*:

Ostergard further discloses that each switch is positioned directly underneath a nib of its respective key element (see for example Fig. 4 items 22 and 6:47-62).

As to **claim 19**, in addition to the rejection of claim 1 over *Lueders*, *Ostergard*, and *Yamazaki*:

Lueders, *Ostergard*, and *Yamazaki* discloses the claimed invention except for the display device being a transfective display device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute a transfective display device for the transmissive display device taught by *Lueders* since it was known in the art that transfective displays were substitutable for transmissive displays and applicant has not taught that the particular display type solved a particular problem (as evidence that transfective

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displays and their strengths and weaknesses, i.e. interchangeability, with respect to transmissive and electroluminescent displays, was well known see for example U.S. patent No. 6,124,971 to Ouderkirk et al. 1:41-60 and surrounding paragraphs).

As to **claim 20**, in addition to the rejection of claim 1 over *Lueders*, *Ostergard*, and *Yamazaki*, *Lueders* further discloses that the continuous flexible display film is a transmissive continuous flexible display film (see for example 4:45-62).

As to **claim 16**, independent claim 16 adds only the concept of first and second sides to the limitations of claim 1. First and second sides are clear in the rejection of claim 1 and claim 16 is rejected over the same art and arguments as claim 1, since the rejection already assumed and art cited already disclosed that the indicia were displayed from the mechanical key elements.

As to **claim 17**, in addition to the rejection of claim 16 over *Lueders*, *Ostergard*, and *Yamazaki*:

Ostergard further discloses a plurality of nibs connected to the second side of the display device, wherein each of the plurality of nibs corresponds to one of the plurality of mechanical key elements (see for example Fig. 4 items 22 and 6:47-62).

As to **claim 18**, in addition to the rejection of claim 17 over *Lueders*, *Ostergard*, and *Yamazaki*, *Yamazaki* further discloses a plurality of resilient members between the plurality of nibs and the plurality of switches (see for example Fig. 4 items 708) and *Ostergard* further discloses a plurality of resilient members between the plurality of nibs and the plurality of switches (see for example Fig. 4 the portion of switch 110 pointed to by the arrow).

4. **Claims 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,067,074 to *Lueders* ("*Lueders*") in view of U.S. Patent No. 6,704,004 to *Ostergard et al.* ("*Ostergard*") and further in view of U.S. Application Publication No. 2002/0034930 to *Yamazaki et al.* ("*Yamazaki*") and further in view of U.S. Patent No. 6,219,731 to *Gutowitz* ("*Gutowitz*").

As to **claim 11**, in addition to the rejection of claim 10 over *Lueders*, *Ostergard*, and *Yamazaki*:

Lueders, *Ostergard*, and *Yamazaki* does not expressly disclose that in the second mode the character that would be input on pressing the key element is dependent on the number of times the key element has been pressed within a predetermined time period of each previous such press without the pressing of another of the key elements.

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Gutowitz discloses multi-tap character input or that the character that would be input on pressing the key element is dependent on the number of times the key element has been pressed within a predetermined time period of each previous such press without the pressing of another of the key elements (see for example *Abstract*).

Lueders, Ostergard, and Yamazaki and *Gutowitz* are analogous art because they are from the same field of endeavor, which is reduced key-set input devices.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use multi-tap input with the device of *Yamazaki*. The suggestion/motivation would have been to use a de facto standard, that is a method that users could be assumed to be familiar with, (see for example *Gutowitz Abstract*).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT R. RAINEY whose telephone number is (571)270-3313. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RR/

/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629